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Animal Welfare Information Center

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CONGRESS IN SESSION

by Cynthia Smith

105th Congress

- **H.R. 696 A bill to amend the Animal Welfare Act to require humane living conditions for calves raised for the production of veal.**

Introduced February 12, 1997, by Gary Ackerman (D-New York) and referred to the Committee on Agriculture.

Section 1. Humane Living Conditions Required for Veal Calves.

The Animal Welfare Act (7U.S.C. 2131 et seq.) is amended—

- (1) by redesignating section 29 (7 U.S.C. 2159) as section 30; and
- (2) by inserting after section 28 (7 U.S.C. 2158) the following new section:

Section 29. Protection of Veal Calves

- (a) Humane Living Conditions Required - Beginning one year after

(cont'd p. 16)

ALSO IN THIS ISSUE...

Enrichment for Calves and Pigs	p. 3
Gnawing Sticks for Primates	p. 11
Pet Theft	p. 13
APHIS Animal Care Update	p. 14
AWA and Compliance	p. 14
USDA "Pocket Pet" Policy	p. 15
Meetings	p. 18
AWIC CARE CD	p. 19
Announcements	p. 20
Grants	p. 22
NIH Workshops	p. 22
AWIC AWA Workshops	p. 23
Veterinary Dosages Database	p. 24

Adoption of Research Animals

by

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Estimates of actual numbers of research animals used in the country vary, but one thing is obvious to most of us working in research facilities: the vast majority of these animals are euthanized when their usefulness has ended. Euthanasia is intrinsic to some projects. For example, many projects, especially those using the smaller laboratory animals, require the euthanasia of the animal for tissue collection. Other projects may lead to illness or disease conditions for which euthanasia is the most humane treatment. Often, however, animals finish a research project in good health and yet may not be suitable for any other re-

search projects at the institution. There may be overstock from a breeding colony, with no research use for some of the young animals produced. In these circumstances, people will naturally consider the possibility of finding adoptive homes for the animals.

It seems that research workers, especially the technicians, students, and veterinarians who work most directly with the animals, have a real emotional need to see some animals escape the system, to break free of the research laboratory. If we defend animal research by claiming that we only use, harm, or kill research animals when necessary, then it follows that we will



Photo by Alexis Wenski-Roberts

want to do our best to ensure good lives for those animals whose sacrifice is not required by our science. Arnold Arluke has described the tendency of laboratory workers to occasionally single out individual animals as laboratory pets, animals who stay in the research facility, but are elevated in status, treated as individual companions, and spared use in experimentation, if possible (Arluke 1993).

Recently, Jan Wyrich has described the adoption program for research animals at the University of California, San Francisco (Wyrich 1996). She observes that an adoption program can decrease stress and raise morale for both the research and the animal care teams and bring both groups to a greater mutual appreciation in the process.

Why discuss adoption in a newsletter devoted primarily to alternatives and the three Rs of replacement, refinement, and reduction? Adoption typically happens *after* a research project ends and does not obviously affect the numbers of animals used; it does not result in their replacement with non-sentient alternatives. Both the Animal Welfare Act regulations and the *Guide for the Care and Use of Laboratory Animals* are silent on the topic. Adoption programs may count as refinements, alternative endings to the story. Most people working in research laboratories see the value of humane and painless euthanasia for animals who are suffering. They may accept that healthy animals must often be killed in the course of a study. Killing healthy animals when there is no research need, however, feels wrong to many of us, especially when a viable adoptive home is available.

Adoption considerations need not happen only after termination of a project. More and more I see researchers designing projects with adoption in mind, choosing experimental endpoints and final data collection with the dual goals of valid data and a group of young, healthy animals ready for adoption. They may hire student workers to help socialize the animals and start to spread the word among the staff early in the project that a particular group of animals will be available for adoption. As more data are collected on the success or failure of different programs, researchers may base their choice of animal breed, age, sex or housing in part on considerations of adoptability.

Some people may resist the idea of adoption. They will point to the fact that these animals are not pets, they were bred for research, as if that fact alone should dictate their fates after the research has ended. Perhaps in our drive to give research animals the best possible lives, we are uncomfortable admitting that life in a laboratory for many species is still a pale comparison to life with a loving family. Adoption programs also undermine any complacency we may have that euthanasia, competently and painlessly performed, is no real harm or injustice to the animals. And adoption programs carry heavy costs, both in money and labor, that someone at the institution must bear.

Virtually any species of research animal may be considered for adoption. With dogs and cats in particular, adoption may be driven by the research and animal care teams, which know that animals that are no longer needed for their project are healthy and of good temperament. In these cases, the staff may actively search for adoptive homes for the animals, spreading the information by word of mouth, posters, or e-mail. Potential owners may be on-campus staff or students or off-campus. Some breeding colonies will even maintain a waiting list of potential homes.

With other species of animals, the more usual adoption route seems to be that an individual worker or student becomes attached to a particular animal and wants to take it home. Individual rats, rabbits, frogs, goats, or various other animals may be selected for adoption even when there is no drive to find homes for every animal on the project. When this happens, seemingly more adoptable animals may be left behind while the quirky individual — the sickly one, the runt, the escape artist, the “talker” — finds a new home.

Sharon Matter has reviewed some of the many arguments for and against the adoption of research animals (Matter 1996). Human health and safety are major concerns, and with them, institutional liability if the adopter gets sick or injured. Most snakes, frogs, and other ectotherms are *Salmonella* suspects, even if there has been no positive culture. Many dogs carry ascarids, *Giardia*, and other potentially zoonotic infections. Dogs, cats, or other animals may bite their adoptive owner or children in the house. Institutions need to devise ways to minimize risks, to inform new owners of persistent risks, and to discourage legal action should human illness or injury occur. Signed release forms are part of this effort, though they have limited legal standing in most States.

It is impossible to reduce risk to zero. No live animal can be guaranteed not to bite or scratch. Finances will limit the number of zoonotic infections that can be screened for, and the screening tests themselves have limited sensitivity. Institutions need to decide what level of risk is acceptable and how to inform owners explicitly of potential problems.

A visible adoption program can broadcast the message that the institution conducts animal research. It is difficult to maintain a closed-door policy or to tightly monitor public relations when research animals are at large in the community. “I had no idea your university uses so many dogs,” is the sort of statement we may not want to hear. However, if the person saying that is driving home with her healthy new pet, that may be just the public relations effort research institutions need. Students, technicians, and others who see healthy animals euthanized when the administration forbids adoption will feel little compunction to keep their disapproval to themselves for long.

Running an adoption program is time consuming and costly, as our Nation’s animal shelters can attest. A research institution may feel more pressure than would a humane shelter to run diagnostic testing for zoonotic infections, to fully vaccinate adoptive research animals, and to spay or neuter them. There may be interviews with the potential adopters to ensure that the animal is going to a good home. The University of California at San Francisco (UCSF) estimates an average of almost \$300 per animal in staff time and supplies is spent preparing animals for transfer to local humane shelters for adoption (Wyrich 1996b). In describing an adoption program for University of Pennsylvania beagles, Harry Ake details a program with heavy time demands on laboratory animal veterinarians, interviewing potential adopters, filling out paperwork, and examining the dogs (Ake 1996). Some of these duties can be delegated to technicians, students, or even volunteers; others, such as rabies vaccination, surgical neutering, and health certificates, cannot.

Animal welfare questions are a top concern. How well does a dog that has been kenneled all her life adapt to life in a home? Can the institution effectively screen potential homes?

(Adoption cont'd p. 9)

ENVIRONMENTAL ENRICHMENT FOR DAIRY CALVES AND PIGS

by

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Introduction

Environmental enrichment has been required for laboratory primates in the United States since 1985 when the Animal Welfare Act was amended (Mench 1995). This is not the case, however, for farm animals. Enrichment and the study of environmental enrichment stems from development of abnormal behaviors in confined animals (particularly primates used for research and zoo animals). So the goal of environmental enrichment is to improve problems created by confinement housing systems (Chamove 1989). Environmental enrichment can include the social environment (group housing and human-animal interactions), the nutritional environment (how the animal gets its food), the sensory environment, and the physical environment (Baumans and van de Weerd 1995). Why not, then, try to evaluate environmental enrichment as a method of enhancing the well-being of intensively housed farm animals such as pigs and dairy calves?

Most studies on environmental enrichment in farm animals have looked at pig environments. Some studies have measured behavior and others both behavior and enhancing animal productivity (a goal of food animal production).

Pedersen et al. (1992) found that feed efficiency was higher in pigs housed in enriched pens than in nonenriched pens. The enriched pens included a mezzanine tier with ramp, two hole self-feeder and operant waterer, maze hiding area, wheelbarrow wheel filled with concrete, suspended rubber hose mobile, and steel rings connected to a liftable wheelbarrow wheel. No immunological differences among animals were

found in this study. Environmental enrichment (chains, football, tire, concrete block, straw) for group-housed gilts has also been shown to increase daily weight gain (Horrell 1992). For newly weaned pigs, environmental enrichment (tire hung from chain) reduced aggression (Schaefer et al. 1990). Questions remain, however, as to the appropriateness of enrichment devices and the standards by which we evaluate such

devices. Only one study on dairy calf enrichment appears in the literature, and the goal of this work was not specifically environmental enrichment but how sucking on an artificial nipple alters digestive hormone concentration (Rushen and de Passille, 1995).

Group Housing and Environmental Enrichment Devices for Dairy Calves

Under typical management practices, dairy calves are weaned from the dam within 24 hours of birth and then housed in individual pens of varying design. Dairy calves are not group-housed because these animals tend to look for something to suckle on or nurse on after being removed from the cow. Nonnutritive sucking is a common occurrence in young mammals (Rushen and de Passille 1995) and is normal except for the fact that one calf sucking on another (cross sucking) can result in disease transmission, hairball formation, and other management problems (Albright et al. 1991).

Is group housing an acceptable method for raising dairy calves? Certainly, it enhances the social environment of the calf and thus constitutes an enriched en-

vironment. But what about the problems encountered in this type of system such as cross sucking and disease transmission. To find a system that alleviates cross sucking, studies were conducted to determine dairy calf preferences for different environmental enrichment devices and how provision of such devices might influence cross sucking.

Housing and animal care for both experiments were consistent with the *Guide for Care and Use of Agricultural Animals*



Figure 1. Calf chewing on Kong toy mounted to the side of the pen with a carriage bolt.



Figure 2a. Three environmental enrichment devices for calves: chain, ball, and Calf Lollie (PVC pipe mounted to the side of pen, located above the calf in this picture).

in *Agricultural Research and Teaching* (Consortium 1988), and all experiments were approved by the Purdue University Animal Care and Use Committee. In the first experiment, calves were removed from their dam between 24 and 48 hours after calving (standard production practice) and were placed in a wooden pen (23 square feet per calf) with wooden slats. Behavior was continuously recorded on a time-lapse videorecorder and later quantified for three separate 24-hour periods when calves were 1, 2, and 6 weeks old. Behaviors recorded were standing, lying, walking, and social/oral behaviors including use of the environmental enrichment devices and sucking on other calves.

Environmental enrichment devices included the following: large and small Kong toys (fig. 1) similar to the ones used by primates (they were bolted to the pen with a carriage bolt), a 15-inch diameter plastic ball, smooth chain hung from the ceiling about 1 foot from the floor of the pen, a calf lollie (fig. 2a and fig. 2b), and a Braden bottle (fig. 3). The calf lollie consisted of a piece of PVC pipe that was capped at both ends. The pipe had holes drilled in it and was suspended from the wall of the pen by two U-bolts. Inside the calf lollie were molasses flakes so that as the calf turned the pipe, the molasses flakes fell out. The Braden bottle (Braden Start Dry Feed Bottles; Braden Industries, Inc., Sulpher Springs, Texas) was mounted in the corner of the pen as

specified by the manufacturer. The bottles have a nipple with a large slit. They contain calf starter feed, and as the calf sucks or bites on the nipple, it receives feed particles. Figure 4 illustrates the arrangement of enrichment devices in the pen.

During this experiment (experiment 1) using six calves per group, most of the enrichment devices were used consistently throughout the 6-week study. Frequency and duration of use was highest during week 2 for the small Kong toy ($P = 0.03$). Frequency of use of the Braden bottle was higher during week 2 than weeks 1 and 6 ($P = 0.001$). The same trends were seen for duration of use of the Braden bottle ($P = 0.083$). Throughout the study, the Braden bottle was filled twice daily as needed. By week 6, calves were able to empty the bottle rapidly, and it was not continuously full. The small Kong toy was used more than the large Kong toy. Neither the ball nor the chain were used much by the calves except for two individuals that regularly pulled on the chain. Cross-sucking frequency was lower in week 1 than in weeks 2 and 6 ($P = 0.034$).

When the duration of use for the devices was ranked for each week, the Braden bottle was used most, cross sucking second, and the large Kong toy third for week 1. During week 2, calves again spent the most time with the Braden bottle followed by the small Kong toy and cross sucking. Week 6 was characterized by use of the Braden bottle, with the large Kong toy second and cross sucking third. Calves spent more time



Figure 2b. Close-up of calf chewing on Calf Lollie.



Figure 3. Calf sucking on Braden Bottle.

engaged in oral activity (combination of cross sucking and use of enrichment devices) during week 2 than in weeks 1 and 6 ($P=0.027$).

Next, we compared group housing with and without environmental enrichment devices (experiment 2). We included immunological measures in this study to determine effects of enrichment on animal health in addition to behavior. Similar housing and management conditions were in effect for experiment 2. Three calves were included in each treatment group. Behavior was continuously videorecorded as in experiment 1. Blood samples were collected during weeks 2 and 6 for analysis of immune function. Total white blood cell counts and subsets of lymphocytes were measured along with plasma cortisol levels; these are all measures that are reflective of an animal's response to stress. Changes were seen in certain populations of white blood cells as the calves got older (CD3, total T lymphocytes; CD4, T helper cells; CD8, T suppressor cells all decreased between weeks 2 and 6), but there were no differences in immunological measures between calves in the enriched versus unenriched pens.

Frequency of cross sucking was greater ($P=0.011$; fig. 5) for calves in pens without enrichment devices. There was no difference in total activity (walking and standing) between the two environments, nor were there any differences in total oral activity (fig. 6), which suggests that the calves want to spend a certain amount of time sucking and that this is an important behavior for them. It appears that the calf will seek out something to suck on whether it is appropriate from a calf management standpoint or not. Use of the Braden bottle also decreased (P) in this experiment, which suggests that habituation (lack of use due to the item no longer being novel) might have occurred with this enrichment device. Duration of use of the large Kong increased over time ($P=0.037$) and it was the device calves spent the most time with during week 6. During week 2, as seen earlier, the Braden bottle was used most. The use of all other enrichment devices was the same for weeks 2 and 6.

Calves are social animals, spending most of their time lying near another calf. It is not clear, however, if this social enrichment (group housing) is enough to enhance calf well-being in light of increases in cross sucking when enrichment devices may not be available. In our first experiments we chose to enrich the social, nutritional and physical environment in order to determine what types of enrichment dairy calves would use most. There is a real need to place more emphasis on developing enrichment devices that meet the behavioral needs of the animal rather than on our perception of what will be enriching. Especially for farm animals, enrichment studies have used methods designed more to improve the public image of animal production (Curtis 1993) than on what enrichment devices are suitable for the animal. In these calf studies, two devices (ball and hanging chain) were included to determine if items that have previously been used as enrichment devices for farm animals were favored by calves more than behavior-oriented devices. Both the ball and chain were used very little by the calves, indicating that these devices probably have little functional significance to the calf. The Braden bottle was used by calves more than other enrich-

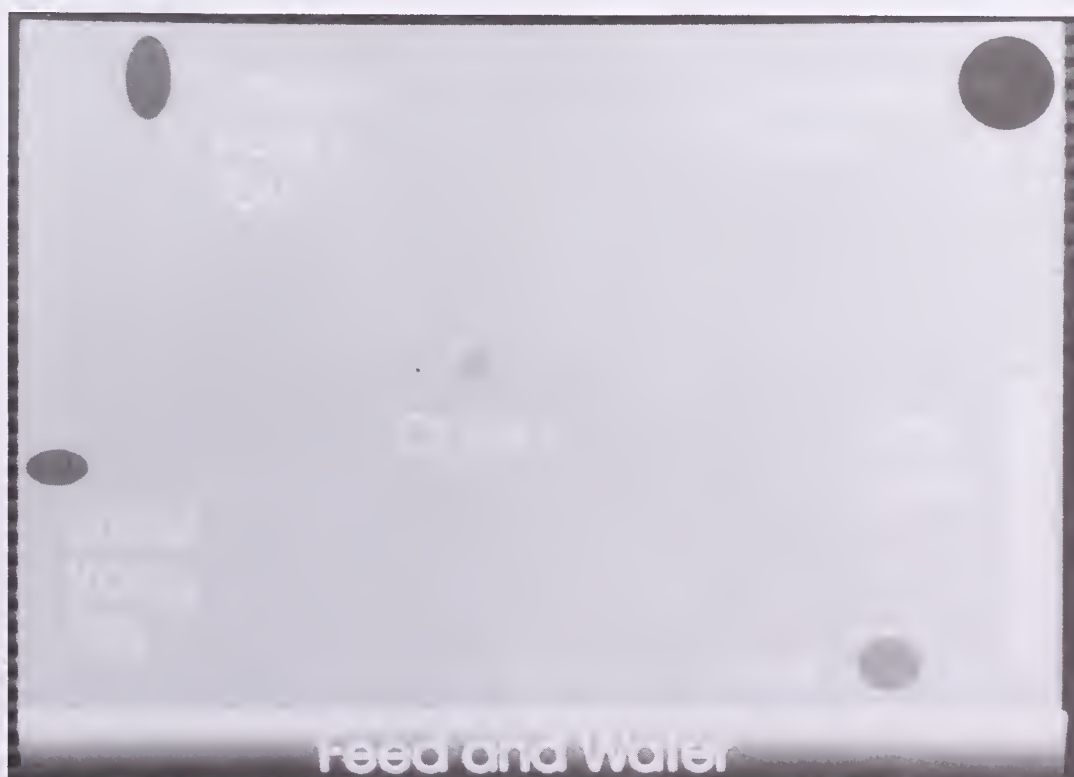


Figure 4. General layout of enrichment devices in the calf pen.

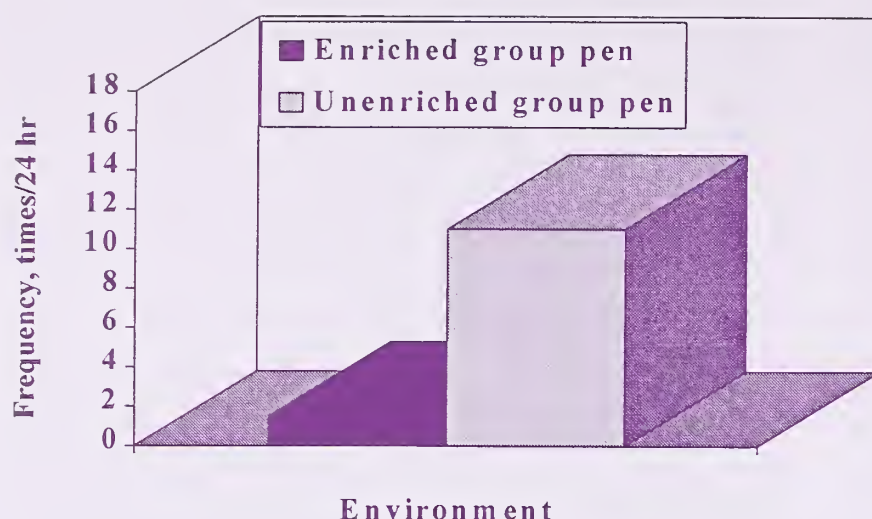


Figure 5. Frequency (time/24 hr) of cross sucking for calves in the enriched group pen and unenriched group pen. SE = 2.04; P = 0.001.

ment devices in both calf studies. This may be due to the design of the bottle. Since it has a nipple for sucking on, the calves are allowed to express a behavior that they are motivated to perform (Rushen and de Passille 1995). As well as satisfying a motivation, sucking on the Braden bottle had a functional consequence (nutrient intake). While we assume that reduction in use of the Braden bottle during week 6 was due to it being empty, additional studies are required to determine if its use became habitual. Cross sucking was reduced with the environmental enrichment and, while this study is preliminary, the result suggests that enrichment may be a useful tool in enhancing environments for dairy calves.

Is Outdoor Housing an Enriched Environment for Pigs?

Studies of environmental enrichment are really a derivative of several studies conducted by psychologists 20-30 years ago (Chamove 1989). These studies looked at the effects of sensory (visual, tactile, social) deprivation versus an enriched environment (providing other animals or toys) and the effect that these environments have on brain development and learning. There is a large body of evidence from rat, mouse, cat, and monkey studies to indicate that environmental complexity can alter both behavior and anatomical development of the brain (Greenough et al. 1973, Carughi et al. 1989). The psychology literature presents evidence that a more complex environment can increase growth of brain cells and may give us a standard by which to evaluate the effect of farm animal environments.

Growth of brain cells is typically measured as increases in the cell body (indicating more machinery for metabolism) or in the arborous branches, or dendrites, that leave the cell body. A typical neuron looks like a tree, with many branches. The more branches (or dendritic segments), the more surface area there is for brain cell activity. The dendrites and the spiny processes on these dendrites serve an important role in the neurochemical transmission of signals in the brain (Bedi and Bhide 1988). In this ex-

periment, we used changes in growth of brain cells to identify differences between an outdoor housing system and a typical indoor confinement swine housing system.

This study was conducted in collaboration with John McGlone at Texas Tech University and Terry Powley at Purdue University. McGlone measured behavior, immune response, and cortisol levels in indoor- and outdoor-reared pigs. The design of the study was such that pigs from the same litter were raised in the two different production environments on the same production schedule. Six sets of littermate (half-sibling) female pigs were randomly assigned to one of three treatments: euthanized at birth, or crossfostered to be developed in an indoor, simple environment (mechanical ventilation and concrete floors) or an outdoor, complex environment (straw bedding on earth; fig. 7). From one day of age and through development, genetic littermate pigs were reared both inside and outside. After 8 weeks, pigs were observed for behaviors, a blood

sample was collected for immune measures, then pigs were euthanized for collection of brain tissue. Behaviors recorded were chewing, rooting, standing, sitting, drinking, rubbing, walking, wallowing, and grazing. From brain tissue, the areas studied included primary auditory (involved in hearing), somatosensory (sense of smell, taste, and touch of the pigs snout), and visual neocortex after Golgi-Cox staining (fig. 8). Only certain neurons fitting an extremely strict set of standards were measured. We used neurons from a specific part of the brain (layer IV) that were completely intact (not cut by the sectioning of tissue). This was important to ensure uniformity in sampling from one brain to the next. A graduate student, Mike Jarvinen, measured 493 total neurons using a highly specialized microscope system (Eutechics Neuron Tracing System).

In our pig environment study, neuron cell body area increased 15 percent ($P < .01$) in all three neocortex regions

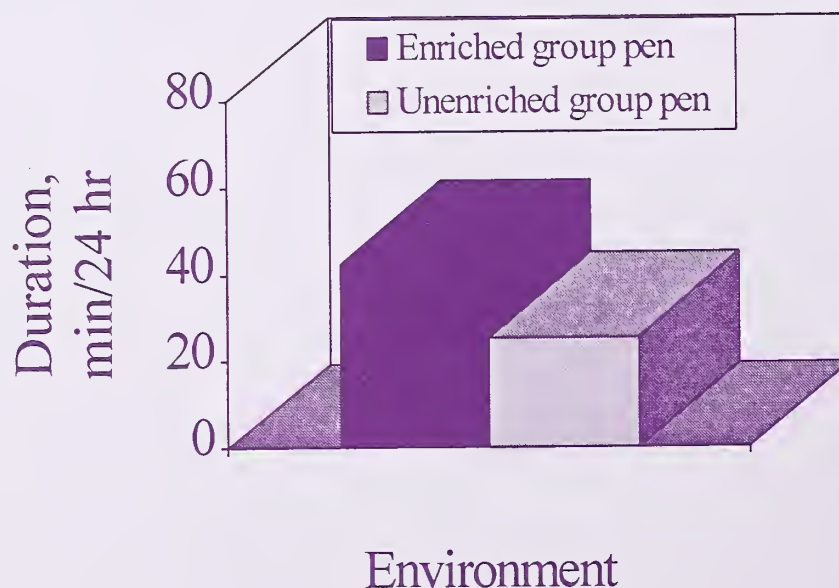


Figure 6. Duration of oral activity (cross sucking and oral behavior with enrichment devices) for group housed calves. SE = 9.31; P = 0.237.

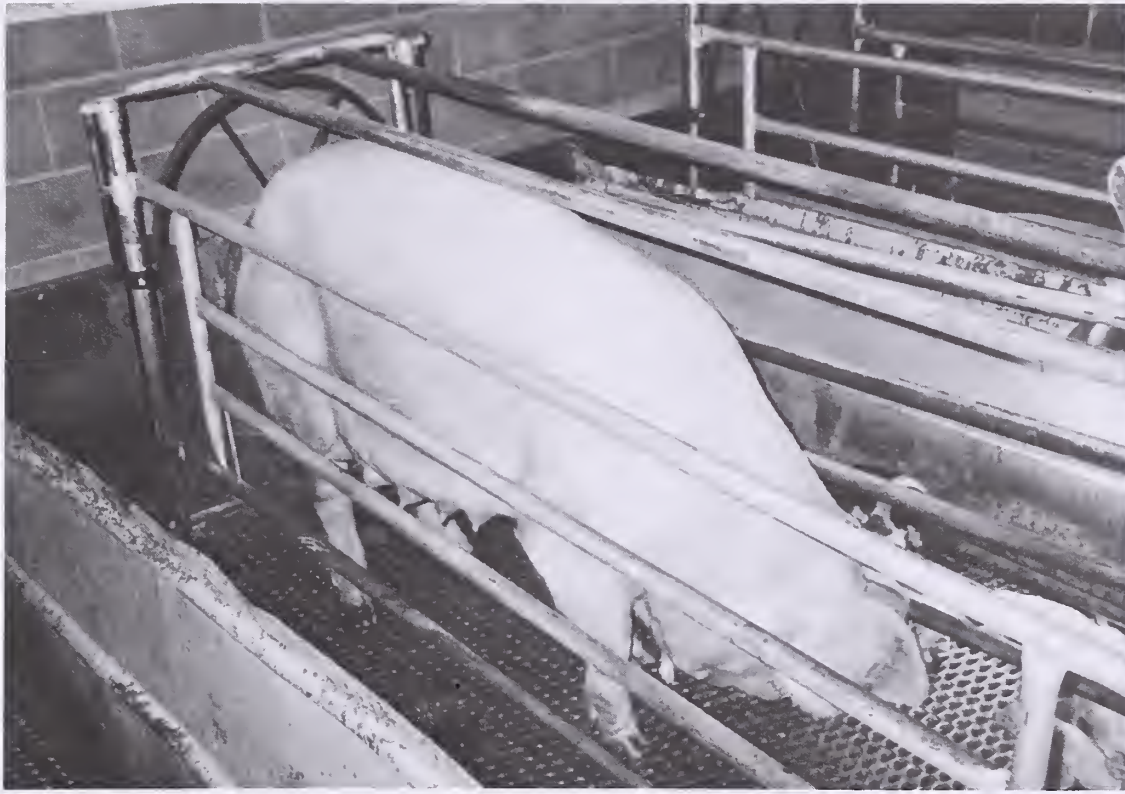


Figure 7a. Swine in traditional indoor farrowing pen.

from birth to 8 weeks old, indicating that our methods were sensitive and could detect differences if present. Other developmental changes were region specific. Auditory cell dendrites decreased in length and membrane surface area and had fewer segments (all $P < .001$) at 8 weeks compared with pigs at birth. Cells of the visual cortex increased in dendritic length and membrane surface area ($P < .05$) at 8 weeks of age compared with birth.

Pigs reared in the more complex outdoor environment had more auditory dendritic segments than pigs reared in the indoor environment (fig. 9). Outdoor-reared pigs were more active (fig. 10) and showed greater oral and rooting behavior

($P < .05$; fig. 11) than indoor-reared pigs. Outdoor-reared pigs had more white blood cells ($P < .05$) than indoor-reared pigs, but lymphocyte proliferation, neutrophil chemotaxis, and NK activity were similar for pigs in each environment.

Like the dairy calves, pigs also perform a certain level of oral behavior. In a more complex environment, they showed an increase in this type of behavior. Rearing pigs in a more typical confinement system, while reducing the amount of oral behavior performed, did not alter their neurons in a manner that would be suggestive of sensory deprivation. The finding that pigs in the indoor environment, which can be very noisy, had fewer auditory dendrites than pigs reared outdoors is of great interest. The preliminary interpretation is that the pig brain is capable of adapting to a noisy environment. Hearing tests are required to prove or disprove this interpretation. What is clear, however, is that although some behaviors (oral-nasal) were different between environments, brain development

for the area of the brain processing this type of sensory information (somatosensory cortex) was unaffected. This suggests that the indoor confinement environment was not a sensory-deprived environment for pigs of this age. While outdoor-housed pigs had more total white blood cells, both groups had normal ranges for this measure and neither group of pigs had altered neutrophil-to-lymphocyte ratios or lowered natural killer cell activity suggestive of a stress response induced by the environment they were housed in. The results that the outdoor and indoor environments appear to be the same, for the most part, according to brain anatomy of the pig, although as seen in the auditory cortex, adaptation may occur over time perhaps to reduce irrelevant noises found in the indoor environment.

Where do we go from here?

More work needs to be done to look into the effects of environmental enrichment for farm animals. While we continue to make progress towards the basic biology of perception and cognition, we can use what we already know about behavior-environment interaction in current production environments to try to make a difference in the well-being of the animal. A logical progression of looking first at what is important to the animal and then what standard of measurement should be used to compare enrichment will be required. With these things in mind, we should be able to make important progress in the area of improving farm animal production environments. Additional research in environmental enrichment could prove to be a powerful tool for increasing both



Figure 7b. Swine in outdoor environment.

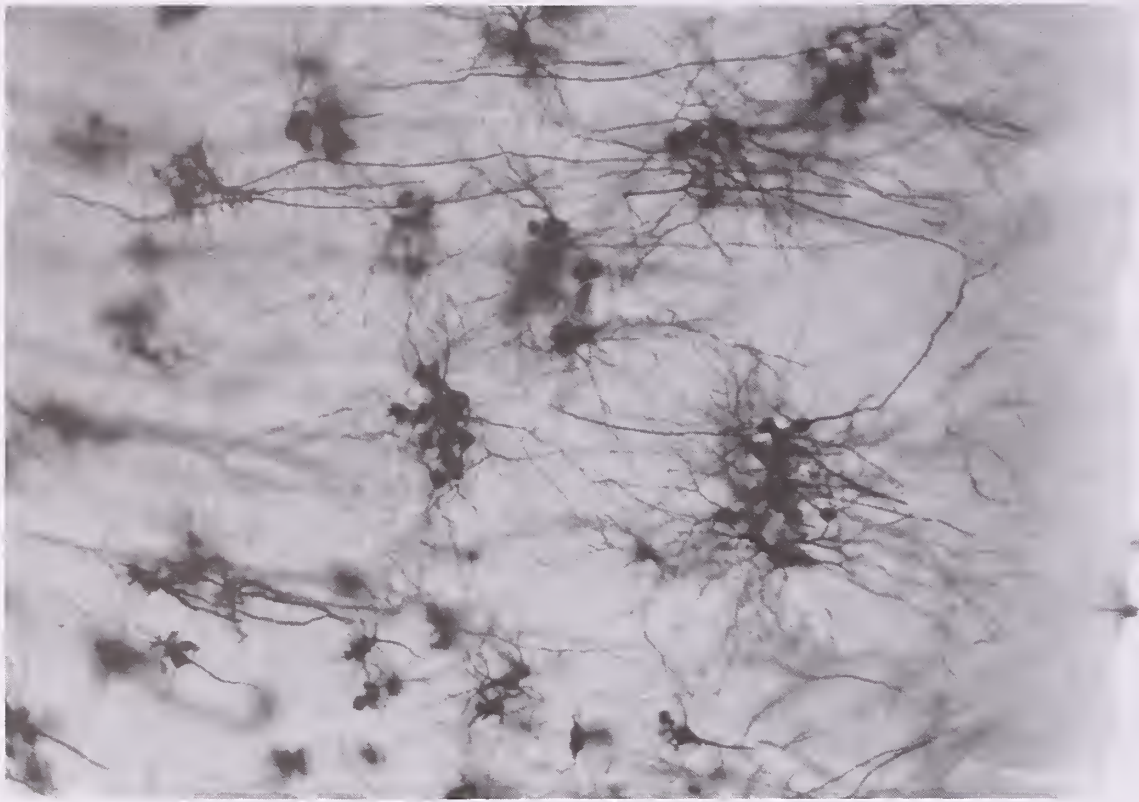


Figure 8. Section of neocortex from 8-week old pig stained by a modified Golgi-Cox procedure. Black cells are identified as neurons with round cell body and numerous dendritic branches projecting out from the cell body.

productivity and well-being in food-producing animals as long as the enrichment we provide has some functional relevance to the animal.

Acknowledgments

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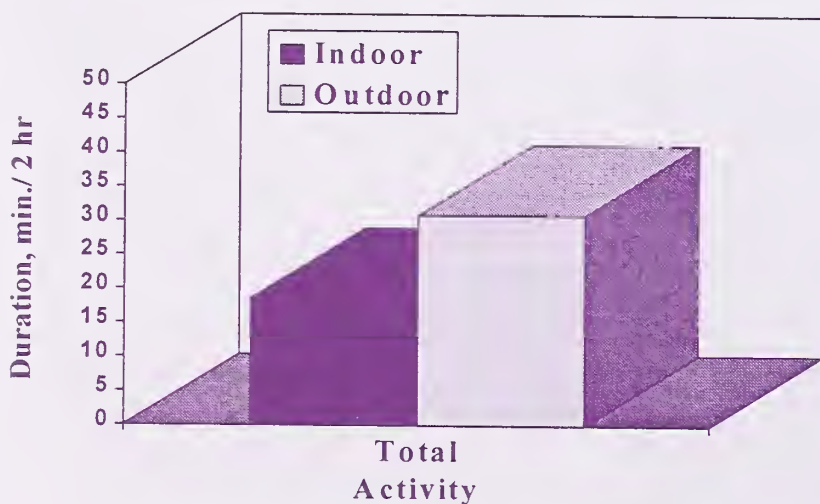


Figure 10. Total active behavior (min/2 hr) for indoor- and outdoor-reared pigs. SE = 2.35; P = 0.006.

Poultry Science Building, W. Lafayette, IN 47907. Tel: 317-494-8022, FAX: 317-496-1993.

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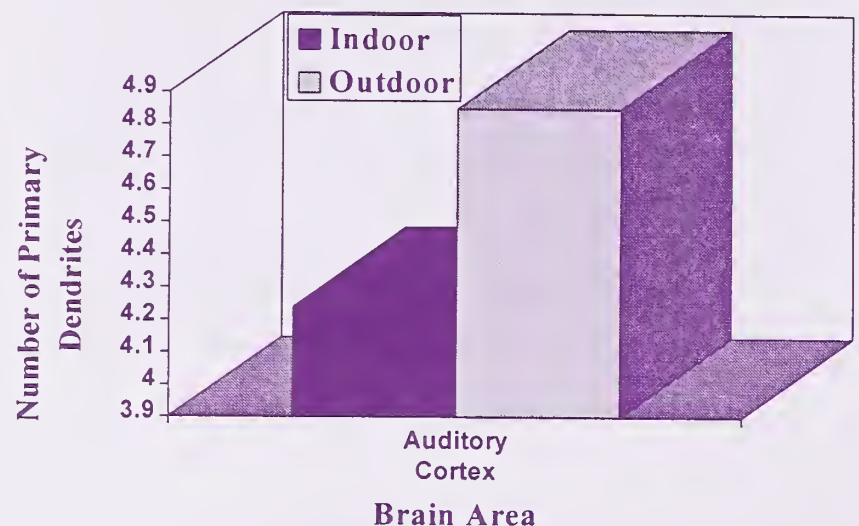


Figure 9. Number of primary dendrites from neurons in the auditory cortex of indoor- and outdoor-reared pigs. SE = 0.22; P = 0.01.

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(Enrichment cont'd p. 12)

Adoption cont'd from p.2

Do we really even know what makes a good adoptive home? What will become of animals if the adoption fails? A research institution's adoption program can potentially compete with neighboring animal shelters' programs. Some animal protectionists have argued against research animal adoption, at least while shelters are over-burdened with adoptable animals, and for the way it assuages our consciences, as researchers, about killing animals. With this avenue for guilt avoidance, the pressure to truly reduce the numbers of animals we use in laboratories may be lessened.

Adoption programs vary. UCSF has an active and conscientious program that is unusual in its close association with local cooperating humane shelters (Wyrich 1996). As an alternative to direct adoption, most UCSF animals are sent to one of two local shelters for adoption. Most institutions seem to restrict themselves to direct adoption with no such middle man. A recent survey of Institutional Animal Care and Use Committee (IACUC) policies revealed that only 20 percent of institutions surveyed report allowing any of their research animals to be adopted (Borkowski 1995). I do wonder how many animal adoptions happen at the other 80 percent, unbeknownst to the officials running the IACUC and responding to the survey.

Unfortunately, all this work is done with little data to support specific policy recommendations. Wyrich describes the UCSF adoption program as successful, but does not provide her criteria for this assessment. Over 500 animals have found adoptive homes since 1982, with no major repercussions to the university (Wyrich 1996). That certainly sounds successful, but offers little guidance on which aspects of the program explain this success. At an average cost of \$300 per adoption, one wonders whether a program at half that cost could be equally successful.

Harry Ake answers more specific questions in his follow-up survey of beagle adoptions from the University of Pennsylvania. Ake tabulates adopters' assessments of their feelings about their new dogs and whether they would recommend similar adoptions to others (Ake 1996). House-breaking stands out as a key issue for pet adopters in this survey. We have a similar adoption follow-up survey in progress at Cornell University with a more heterogeneous population of dogs. Our preliminary data reveal a similar concern among owners

for house-soiling beagles, unfortunately, performing worse in this category than either golden or Labrador retrievers. This breed difference in behavior has been identified in the general pet population as well (Hart and Miller 1985). The age at adoption also seems to influence a dog's chance of remaining with his or her adoptive owners in our own survey and in Patronek's survey of risk factors for surrender of animals to humane shelters (Patronek 1995).

In both the Cornell and University of Pennsylvania surveys, over 80 percent of dogs were still with their adoptive owners several months after adoption (of course, neither survey had a 100-percent response rate). Is 80 percent a good success rate? Currently, there are few comparative data on the success of adoption of animals from other sources such as pet stores or shelters.

Owner satisfaction varies as much with the owner as with the animal. I know of one veterinary student, for instance, who crated her 9-year-old adoptive laboratory beagle for over a year before she could trust her loose in the house without soiling. But she loved her little beagle, her Newfoundland played with it, as did her adopted research cat, and the foursome made for a happy household. Other owners would not have tolerated such a long housebreaking period and would have reported an unsuccessful or short-lived adoption.

Neither our Cornell survey nor Ake's Pennsylvania survey have identified owner characteristics or behaviors that are predictive of successful adoption. Ake and Matter discuss screening or interviewing potential owners but give no criteria. Again, data are sparse. Surveys at Purdue of people surrendering animals to shelters suggest that cer-

tain owner behaviors such as taking a new dog to obedience training or to a veterinarian are in some way associated with higher numbers of owners retaining their adopted or purchased dogs (Patronek 1995). I have worried that owners who adopt research animals under pressure to save the animal's life would not make strong and lasting bonds; these fears have so far not been confirmed.

In conducting these surveys, we do not hope to distinguish successful from unsuccessful adoptions or to formulate a blanket policy for or against the practice. Rather, we hope that adoption is a policy that institutions will consider and that we can identify potential problems to be remedied and strategies to be used. As more data are gathered, we will be able to generate a profile of the ideal adoption candidate. We



Photo of Vito, the adopted research cat, by Larry Carbone.

also hope to counsel and support owners and their pets during the early months of home life while the family bond develops.

For institutions that are thinking about allowing adoptions, here are some considerations:

1) Legal and administrative. Institutional attorneys should help to draft a good release form that the new owner signs. Animals are adopted as is, with no guarantee that they are housebroken, will stay healthy, or are not carrying some potentially zoonotic infections. Proper documentation and USDA forms must be filed.

Decide on what sort of follow-up support you are willing and able to give such as behavior consultations, vaccines and veterinary advice, or taking the animal back if the adoption is unsuccessful. Often the adoption process is driven by the most junior staff and students. Faculty and the administration may be permissive but not highly supportive. Senior level administration must be aware and in support of the program, as there will inevitably be problems that they must deal with. Staff time, husbandry supplies, and diagnostic testing take resources as the adoption program grows. The level of commitment the institution has to the adoption program will determine where these resources come from and how carefully animals are screened before they leave the institution.

2) Choose the animals carefully. Hard luck cases have enormous appeal to some people and may be appropriate for some carefully selected owners. Animals with visible defects that are retired from surgical projects, for instance, are conspicuous reminders of their research or teaching origins. Will the new owner explain this to others in a way that your institution finds acceptable? Animals on infectious disease studies, especially with zoonotic infections, are rarely acceptable adoption candidates. Large dogs of questionable temperament are not good adoption candidates. My preference is that food animal species be retired as pets, not as breeders or meat. Few of the drugs and anesthetics they will have received have been cleared for use in animals intended for human consumption. Agriculture programs that raise animals for research and sale are the exception to this rule, but antibody-production rabbits and goats or fetal-catheterization sheep, for instance, should be retired only as pets.

3) Work with local humane societies. You may not have direct cooperation with your local shelter, but they should know about your program. Many research animals are tattooed. These animals may find their way to the local shelter either as lost animals or as unsuccessful adoptions. The shelter will want to contact someone at the institution with the tattoo number and get complete information on the animal's history. This also gives the institution some feedback on their adoption policy.

4) Practice the Three R's. Institutions can reduce the number of surplus animals in need of homes by coordinating different lab groups for tissue collection and by planning breeding colonies to meet research demands without overproduction. A well-coordinated and well-informed laboratory animal resources department can help balance two potentially competing goals: conservation by channeling animals from one project to another (typically, terminal) project versus placing animals in adoptive homes. Training and socialization are further refinements that can help dogs and cats thrive in the

laboratory and in adoptive homes. Survey data show that if the laboratory dog is house-broken while at the institution, the adoption is more likely to be satisfactory and long-lasting. Volunteers might be employed to teach dogs who are available for adoption some basic house manners.

5) Expect problems. Dogs may bite. Cats may hide under a couch for a year. Families may develop infections, and the physician suspects their pet. Animals may become ill shortly after adoption. Animals with behavior problems may end up at the local shelter. You are working to minimize the risk of unsuccessful adoption; you can only eliminate it by banning adoption altogether. Even then, problems are not entirely eradicated, as clever staff will find ways to slip their favorite animals out the back door with a wink and a nod, and a note in the record that the puppy was euthanized.

6) Follow up on adoptions. Thorough surveys are time-consuming research projects that not every institution will want to conduct. Data are sorely lacking to guide refinement of adoption programs, however, and more information is needed. If the institution does not actively solicit information on adoption success, only the failures will be known, whether they are brought back to the institution or surrendered to a local shelter. The successful adoptions remain invisible to the institution in most cases, even though they appear to predominate by a healthy margin.

Adoption programs for research animals can boost employee morale, enhance public relations, and most importantly, give research animals a chance to find a loving home. They do require work, time, and money. If institutions put some of the time, energy, and resources into disposition of their animals that they typically put into animal acquisition, a program that benefits everyone can be developed.

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The Wisconsin Gnawing Stick

by
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Financial and labor costs often limit the implementation of environmental enrichment options, especially when enrichment should be provided for a large number of individual animals.

The Wisconsin Gnawing Stick was developed in 1987 to serve as an affordable inanimate enrichment option for caged macaques. The sticks simply consist of branch segments of dead deciduous trees. Depending on the size of the individual animal, they have a length of 12-30 cm and a radius of 2-6 cm. Sticks cut of red oak (*Quercus rubra*) branches are particularly suitable because they gradually wear into flakes that are so small that even large quantities pass through sewer drains without clogging. Branches of many other common tree species (white oak, black locust, box elder, black cherry, weeping willow, silver maple) disintegrate into relatively large strips that tend to get stuck in drains, thereby causing clogging problems.

Branches of dead trees are obtainable for no or little expense, and they can be easily cut with a bow saw into adequately sized segments. The gnawing sticks are placed into the cages without any attachment. They are cleaned with warm water daily and disinfected once every 2 weeks during the routine cage sanitation procedures.

Loose branch segments elicit the following behaviors in macaques: manipulating, gnawing, nibbling, chewing, hugging, dragging, rolling, playing, and perching (fig. 1). The opportunity to gnaw a chewable natural material not only counteracts boredom, but is also likely to benefit the animal's dental health (Brinkman 1996, Reinhardt 1990a, Reinhardt 1990b). Because of gradual wear and progressive dehydration, the sticks steadily change their texture and configuration, thereby retaining some novelty. After 1-6 months, they usually become so small that they have to be replaced (figure 2).

In a pilot study, 25 adult, singly-caged rhesus macaques (*Macaca mulatta*) were each exposed to a regularly replaced gnawing stick for 12 months and observed thereafter. The

most recently replaced stick was 1 month old. It revealed traces of wear in 96 percent of cases and was actively used by the animals 0 to 20.6 percent of the time with a mean of 3.3 percent (Reinhardt 1989).

In a later assessment, 60 pair-housed rhesus macaques of different age classes (42 adults 9-30 years old, 18 sub-adults 3.5-4 years old) were exposed to gnawing sticks for 18 months and observed thereafter. Each pair had continuous access to two sticks that had been replaced 1 week before the test observation. The sticks showed traces of wear in 100 percent of cases. Individuals were engaged in stick use on average 4.8 percent of the time, with subadults spending significantly more time with the sticks than adults (9.5 percent versus 2.8 percent) (Reinhardt 1990b). In a comparative study with 20 adult pair-housed stumptailed macaques, individuals were actively engaged with their gnawing sticks 2.2 percent to 28.2 percent of the time with a mean of 5.7 percent (Reinhardt 1990a).

In addition to perches and social companionship, red oak gnawing sticks were implemented at the Wisconsin Regional Primate Research Center as basic cage enrichment in 1989. All caged rhesus macaques (more than 700 animals) and all caged stumptailed macaques (approximately 36 animals) have continual access to gnawing sticks since that time. This simple and inexpensive enrichment technique provides the animals with sustained species-adequate stimulation for the expression of species-typical be-

haviors. Long-term exposure to the sticks has resulted in no recognizable health hazards (compare with Line and Morgan 1991).

Acknowledgments

I am very thankful to the Cowley family for granting me permission to cut more than 5,000 gnawing sticks from dead red oaks on their farm without charge.



Figure 1. Subadult female rhesus macaque playing with her gnawing stick.



Figure 2. Red oak gnawing stick being used for 1, 2, 4, and 5 months by an adult rhesus macaque. Note the small flakes resulting from gnawing. (Originally published by V. Reinhardt in *Laboratory Primate Newsletter* 31(2); copyright 1992 by Brown University. Reprinted with the permission of Judith E. Schrier, Editor, *Laboratory Primate Newsletter*.

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Enrichment cont'd from p.8

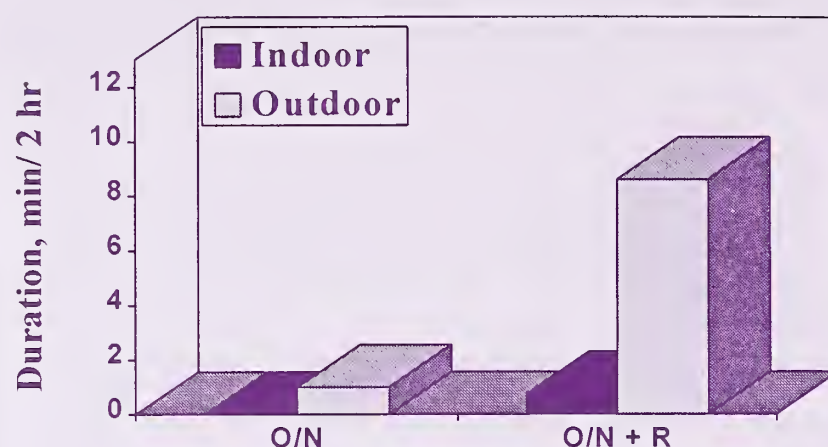


Figure 11. Oral and nasal behaviors (O/N or rooting with the snout) and oral, nasal, and rubbing behavior (O/N + R) for indoor vs outdoor-reared pigs. SE = 1.16; P = 0.005.

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USDA CLAMPS DOWN ON PET THEFT

RIVERDALE, MD
Feb. 13, 1997

The U.S. Department of Agriculture has taken a firm stand on pet theft. It will not tolerate this practice by any Animal Welfare Act licensee or registrant at any time.

"On this, Pet Theft Awareness Day, I wish to reiterate our commitment to insisting on thorough recordkeeping by AWA licensees and registrants and to expanding our traceback efforts of animals covered under the Act," said Michael V. Dunn, USDA assistant secretary for marketing and regulatory programs. "These and our other enforcement measures in recent years have enabled us to make significant progress in stopping the trafficking in stolen animals."

In 1995, USDA's Animal and Plant Health Inspection Service's animal care program, which enforces the AWA, instituted a policy that subjects all random-source, class B animal dealers who handle 100 or more animals a year to quarterly inspections. Prior to that time, these dealers, who are a significant source of all AWA-regulated animals used in research, were inspected once annually. APHIS is a part of USDA's marketing and regulatory programs mission area.

USDA also assessed more than \$450,000 in penalties and revoked 19 licenses, including those of class B dealers alleged to have trafficked in stolen animals. USDA projects that its 1996 enforcement figures that will be released to Congress this spring will be even greater. The number of random-source animal dealers in the United States has dropped from approximately 80 to 40 in recent years.

Since becoming head of USDA's marketing and regulatory programs in January 1996, Dunn has strongly supported these enforcement efforts. Last February, he and Secretary Glickman sent a letter to all animal care field personnel stressing the importance of preventing pet theft.

He has also supported animal care's new strategic direction, which focuses on improving the program's overall performance. This strategy includes possible statutory and regulatory changes. It also includes increased public outreach, as exemplified by animal care's acclaimed missing pets homepage on the worldwide web that provides private citizens with a national forum for searching for their animals. This site has been visited approximately 6,000 times since its inception in July 1996.

Dunn emphasizes that cooperating with both industry and animal welfare organizations is essential to the success of USDA's efforts and that USDA's enforcement focus is on individuals who have historically had problems complying with the law, not all AWA licensees. He notes that, last spring, USDA held three public meetings on the animal care program and that the input from these forums has been incorporated into animal care's strategy for the future.

Under the AWA, USDA requires all licensed animal dealers to maintain records of their acquisition and disposition of animals. USDA's animal care inspectors routinely make unannounced inspections of dealers' facilities and records to ensure they are complying with the Act. If recordkeeping discrepancies indicate that a licensee could be dealing in stolen animals, USDA investigates the matter and takes appropriate enforcement action. Possible penalties include fines and license suspensions or revocations. ■

APHIS- Animal Care Update

The Animal Welfare Act – Who needs to comply?

Over the last several weeks, the staff at AWIC has received several phone calls and e-mails suggesting that only an institution or company receiving Federal funds needs to register with the U.S. Department of Agriculture (USDA) as a research facility and comply with the Animal Welfare Act (7 U.S.C. 2131-2157). The October 11, 1996, issue of *Science* states that only Federally funded investigators have to comply with certain sections of the Animal Welfare Act.

USDA'S ANIMAL CARE GOES ONLINE

The U.S. Department of Agriculture's Animal Care (AC) program now has a home on the internet. The AC homepage, found at www.aphis.usda.gov:80/reac, contains announcements, missing and found animal lists, annual enforcement reports and other publications, lists of registered dealers, transporters, research facilities, and exhibitors, factsheets, press releases, congressional bills, and links to similar sites. The site was developed by Jerry Depoyster, D.V.M., of the Animal Care staff and has already attracted media attention from *USA Today*, CNN, and the *Washington Post*.

"The new website is a step in the right direction," said Michael V. Dunn, USDA assistant secretary for marketing and regulatory programs. "Now, we can make large amounts of important information available to the public with the push of a button."

The AC homepage also contains a link to the Horse Protection Act homepage. The HPA site contains a list of suspended designated qualified persons, the HPA fiscal year 1995 enforcement report, horse owner and protection organizations, and general information concerning the HPA. ■

According to W. Ron DeHaven, D.V.M., Acting Deputy Administrator for Animal Care, Animal and Plant Health Inspection Service (APHIS), USDA, **any non-Federal institution using regulated live animals for research, testing, teaching, or experimentation must register with USDA as a research facility.** Regulated animals include all warm-blooded vertebrates but, at the present time, exclude rats of the genus *Rattus*, mice of the genus *Mus*, and all birds. Farm animals used in food/fiber research or production are excluded by law. [Note: Federal facilities must comply with the Animal Welfare Act. However, they are exempt from registering with USDA.]

APHIS publishes a booklet – *Licensing and Registration Under the Animal Welfare Act-Guidelines for Dealers, Transporters, and Researchers* – that lists the major types of regulated and exempt business. This publication is available from AWIC. Additional information is available from the Animal Care regional offices.

Animal Care Regional Offices

Eastern Region

Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, Wisconsin

USDA, APHIS, Animal Care
2568-A Riva Road, Suite 302
Annapolis, MD 21401-7400
Phone: (410) 571-8692

Central Region

Arkansas, Iowa, Kansas, Louisiana, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Texas

USDA, APHIS, Animal Care
501 Felix Street, Building 11
P.O. Box 6258
Fort Worth, TX 76115
Phone: (817) 885-6923

Western Region

Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

USDA, APHIS, Animal Care
9580 Micron Avenue, Suite J
Sacramento, CA 95827
Phone: (916) 857-6205 ■

APHIS-Animal Care Update

New Policy Statements or Guidelines

Pocket Pets:

February 6, 1997

Animal Care Management
Team

The issue of regulation of "pocket pets" has been extensively reviewed over the last several months by several groups, including our Revised Inspection Procedures Team and the Technical Advisory Group (Supervisory Animal Care Specialists and Staff Officers). There is consensus between these groups, and I agree with their recommendation. This memorandum hereby retracts the previous policy memorandum of March 24, 1994, and establishes new guidance effective immediately.

All retail dealers of small exotic pet type animals (pocket pets) are covered under the Animal Welfare Act and will be regulated. These facilities will be licensed according to our current regulations and standards which includes passing the pre-licensing inspection. However, follow up inspections of a routine nature will be conducted on a complaint driven basis with a minimum inspection frequency of at least once every three years. This method of inspection is consistent with risk-based inspection procedures currently under development. Based on our current knowledge and high degree of public oversight typical of retail pet stores, these types of operations

can be considered low risk for both the animals and the Agency.



Retail pet stores that sell small exotic pet type animals will be licensed as class B dealers. The licensing fee will be based on the sales of the wild/exotic animals only, but all covered animals are to be inspected. Official USDA identification is not required for dogs and cats sold retail. Records of acquisition are required for all covered animals but records of disposition are only required for the wild/exotic animals.

Future modifications to these procedures may become necessary as a result of additional information gleaned through licensing and inspecting retail pocket pet dealers or for consistency with final procedures adopted for risk-based inspections. We will also be considering a regulatory change that would allow for registration or a special license classification for such activities.

W. Ron DeHaven

Acting Deputy Administrator
Animal Care ■

Animal Welfare Act Violations and Settlements on the WWW

USDA news releases, program announcements, and media advisories are available on the Internet. Access the APHIS Home Page by pointing your Web browser to <http://www.aphis.usda.gov> and clicking on "APHIS Press Releases." Also, anyone with an e-mail address can sign up to receive APHIS press releases automatically. Send an e-mail message to majordomo@info.aphis.usda.gov and leave the subject blank. In the message, type **subscribe press_releases**

If you do not have e-mail access, you may contact the APHIS Legislative and Public Affairs (LPA) offices at:

- Riverdale, Maryland — (301) 734-7799, fax: (301) 734-5221 or write USDA, APHIS, LPA, Unit 49, Suite 4B09, 4700 River Road, Riverdale, MD 20737
- Denver, Colorado — (303) 969-6560 or (303) 784-6238, fax: (303) 969-6973 or (303) 784-6222.
- Riverside, California — (909) 395-8666, fax: (909) 395-8665. ■

Legislation cont'd from p.1

the date of the enactment of this section, no person shall raise a calf for the production of veal unless the person complies with the following requirements:

- (1) The calf must be free to turn around without difficulty, lie with its legs outstretched, and groom itself, without any impediment such as too small an enclosure or chaining or tethering.
 - (2) The calf must be fed a daily diet containing sufficient iron and, if the calf is more than 14 days old, sufficient digestible fiber to prevent anemia and to sustain full health.
- (b) Penalties - The remedies and procedures provided in subsections (b), (c), and (d) of section 19 shall apply with respect to a violation of subsection (a).
- (c) Investigations and Inspections - For purposes of enforcement of this section, the Secretary may make such investigations or inspections as the Secretary considers necessary of any facility where calves are kept for the production of veal. Section 16 shall apply with respect to investigations and inspections conducted under this section.

● **HR 635 A bill to amend the Animal Welfare Act to extend the licensing requirements of the act to additional dealers in animals and to strengthen the registration, prohibition, and enforcement provisions of the act.**

Introduced February 6, 1997, by Jon Fox (R-Penn.) and referred to the Committee on Agriculture. This act may be cited as the "Animal Welfare Act Amendments of 1997."

Section Two expands the term "dealer" to mean any person who acquires, delivers for transportation or transports, buys or sells any animal for research, experimentation, teaching, exhibition or use as a pet, any dog for hunting or security purposes, or any dog or cat for breeding purposes. It also includes any operator of an auction but excludes an animal pound or shelter operated by or on behalf of a government entity that sells or provides animals to any dealer or research facility.

Section Three establishes licensing requirements for dealers that allow the Secretary of Agriculture to exempt dealers from licensing if the exemption will not affect the policy outline of the act and if the exempted activity does not involve the use of animals for research. Persons eligible for exemptions include retail pet store operators and persons who sell wild or exotic animals. Licenses shall not be issued or renewed to persons who have had a license suspended, revoked, or terminated due to a violation of the act or who have been convicted of a charge violating any treaty or Federal, State or local law including the Marine Mammal Protection Act of 1972 or the Endangered Species Act of 1973.

Section Four prohibits unlicensed persons from acquiring animals, selling or offering any animal for sale, leasing or offering any animal for lease, transporting or offering to transport any animal, buying or offering to buy any animal, exhibiting or offering to exhibit any animal, transferring any animal, or engaging in any other business activity as dealer or exhibitor.

Section Five creates humane standards and record keeping at auction sales by dealers, research facilities, exhibitors, and by persons consigning animals to auctions.

Section Six outlines penalties. Licenses may be suspended or not renewed for up to 120 days if the

Secretary believes that a licensed person has violated or is violating any provision of the act. If it is subsequently determined that a violation has occurred, the Secretary may suspend the person's license for an additional period of time. Other subsections address the administrative procedures to be followed with regard to notification of the charges and speedy adjudication of the charges.

Section Seven allows the Attorney General to apply for an injunction whenever the Secretary [of Agriculture] has reason to believe the licensee should be enjoined from operating in violation of the act. The Secretary may make such a request when it is believed that the dealer, exhibitor, research facility, carrier or handler is dealing in stolen animals, is placing the health of any animals in danger in violation of this act, or is otherwise in violation of this act.

● **H.R. 594 To amend the Animal Welfare Act to ensure that all dogs and cats used by research facilities are obtained legally.**

Introduced February 5, 1997, by Charles Canady (R-Fla.) and referred to the Committee on Agriculture. Referred to the Subcommittee on Livestock, Dairy, and Poultry on February 11. Executive comment requested from USDA on February 11. This act may be cited as the "Pet Safety and Protection Act of 1997."

"Section 7 of the Animal Welfare Act is amended to read as follows: (a) Use of Certain Dogs and Cats—No research facility or Federal research facility may use a dog or cat for research or educational purposes if the dog or cat was obtained from a person other than a person described in subsection (c). (b) Selling, Donating, or Offering Dogs and Cats—No person, other than a person described in subsection (c), may sell, donate, or offer a dog or cat to any research facility or Federal research facility. (c) Permissible Sources—Persons from whom a research facility or a Federal research facility may obtain a dog or cat for research or educational purposes under subsection (a) and persons who may sell, donate, or offer a dog or cat to a research facility or a Federal research facility under subsection (b) are—(1) a dealer licensed under section 3 [of the Animal Welfare Act] who has bred and raised such a dog or cat; (2) a publicly owned and operated pound or shelter that—(A) is registered with the Department of Agriculture; (B) is in compliance with section 28(a)(1) and with requirements for dealers in section 28 (b) and (c); and (C) obtained such dog or cat from its legal owner, other than a pound or shelter; (3) a person who is donating such dog or cat and who—(A) bred and raised such dog or cat; or (B) owned such dog or cat for not less than 1 year immediately preceding the donation; (4) a research facility licensed by the Department of Agriculture; and (5) a Federal research facility licensed by the Department of Agriculture."

The act does not require a pound or shelter to release dogs or cats to research facilities.

● **H.R. 453 To amend the Packers and Stockyards of 1921 to make it unlawful for any stockyard owner, market agency, or dealer to transfer or market nonambulatory cattle, sheep, swine, horses, mules, or goats, and for other purposes.**

Introduced January 21, 1997, by Gary Ackerman (D-New York) and referred to the Committee on Agriculture. This act may be cited as the "Downed Animal Protection Act."

Title III of the Packers and Stockyard Act of 1921 is amended making it unlawful for any stockyard owner, market agency, or dealer to buy, sell, give, transfer, market, hold, or drag any nonambulatory livestock unless the animal has been humanely euthanized. The bill defines the terms "humanely euthanized" and "nonambulatory livestock." The bill also provides for civil and criminal penalties.

- **S. 39 To amend the Marine Mammal Protection Act of 1972 (MMPA) to support the International Dolphin Conservation Program in the eastern tropical Pacific Ocean, and for other purposes.**

Introduced January 21, 1997, by Ted Stevens (R-Alaska) and referred to the Committee on Commerce, Science, and Transportation. This act may be cited as the "International Dolphin Conservation Program."

This act amends the MMPA to allow authorizations for the incidental taking of marine mammals, including any species designated as depleted under the MMPA but not threatened or endangered under the Endangered Species Act, during commercial purse seine yellowfin tuna fishing in the eastern tropical Pacific Ocean. It also removes provisions requiring that, for purse seine yellowfin tuna fishing, the goal of reducing incidental kill or serious injury to insignificant levels approaching zero be satisfied by the best safety techniques and equipment economically and technologically feasible. It also amends the Dolphin Protection Consumer Information Act regarding the circumstances in which tuna products may be labeled as "Dolphin Safe."

Related bill H.R. 408.

- **H.R. 39 To reauthorize the African Elephant Conservation Act.**

Introduced January 7, 1997, by Don Young (R-Alaska) and referred to the Committee on Resources. This act may be cited as the "African Elephant Conservation Reauthorization Act of 1997."

This act reauthorizes the African Elephant Conservation Act (16 U.S.C. 4245) for the years 1997 through 2002.

- **H.R. 226 To deem the Florida Panther to be an endangered species under the Endangered Species Act of 1973.**

Introduced January 7, 1997, by Bill McCollum (R-Florida) and referred to the Committee on Resources.

"Notwithstanding any other provision of law, the species commonly known as the Florida Panther is deemed to be an endangered species for purposes of the Endangered Species Act of 1973 (16 U.S.C. 1531)."

- **H.R. 374 A bill to amend the act popularly known as the "Sikes Act" to enhance fish and wildlife conservation and natural resources management programs.**

Introduced January 7, 1997, by Don Young (R-Alaska) and referred to the Committee on Resources and the Committee on National Security. This act may be cited as the "Sikes Act Improvement Amendments of 1997."

This bill amends the Sikes Act of 1960 to direct the Secretary of Defense to carry out a program of wildlife, fish, and game conservation on each U.S. military installation. It also requires an integrated natural resource management plan to be included in each program. It authorizes the

Secretary to manage each military installation to provide: (1) for the conservation of fish and wildlife on each installation and sustained multipurpose uses of those resources; and (2) necessary or appropriate land management, forest management, and wildlife oriented recreation. Other provisions provide: (1) for the enforcement on military installations of all Federal laws pertaining to natural resources conservation on Federal lands; and (2) for the extension through fiscal year 2000 the authorization of appropriations for natural resources conservation programs on military installations, as well as equivalent programs on other public lands.

- **H.R. 173 To amend the Federal Property and Administrative Services Act of 1949 to authorize donation of surplus Federal law enforcement canines to their handlers.**

Introduced January 7, 1997, by Elton Gallegly (R-Calif.) and referred to the Committee on Government Reform and Oversight.

Section 203 of the Federal Property and Administrative Services Act of 1949 is amended by adding at the end the following: (r) The head of a Federal agency having control of a canine that has been used by a Federal agency in the performance of law enforcement duties and that has been determined to be surplus property may donate the canine to an individual who was responsible for handling the canine in the performance of those duties

104th Congress

- **H.R. 4249 To amend and strengthen the Animal Welfare Act.**

Introduced September 27, 1996, by Steve Gunderson (R-Wisconsin) and referred to the Committee on Agriculture. Executive comment requested from the U.S. Department of Agriculture on October 4. This bill may be cited as the "Animal Welfare Act Amendments of 1996."

Subsection (f) of section 2 of the Animal Welfare Act (7 U.S.C. 2132(f)) is amended to include the following definition of "dealer": Any person who, in commerce, for compensation or profit, delivers for transportation, or transports, except as a carrier, buys, offers to buy, sells, or offers for sale, leases, offers to lease, negotiates the purchase, sale, or lease of, or transfers — (A) any animal, whether alive or dead, for research, experimentation, teaching, exhibition, or use as a pet; (B) any dog for hunting or security purposes; or (C) any dog or cat for breeding purposes. The definition of a "dealer" includes operators of auction sales; and any person who owns or leases premises which are used for trade days or flea markets at which the activities described in this subsection are conducted. A "dealer" does not include any pound or shelter operated by or on behalf of a municipality; or any governmental entity which sells or otherwise provides animals to any dealer or research facility.

Section 3 of the Animal Welfare Act (7 U.S.C. 2133) is amended to read as follows: No license shall be issued or renewed under this Act until the dealer or exhibitor has demonstrated compliance with the regulations and standards promulgated by the Secretary pursuant to this Act; to any person who has been convicted of, or entered a plea of nolo contendere or the equivalent thereto, to a charge of violating any treaty, Federal, State, or local law involving

the care or treatment of, or record keeping for, animals; the Marine Mammal Protection Act, the Endangered Species Act; or any treaty, Federal, State, or local law for the protection of endangered or threatened species; to any person who has failed to pay a civil penalty which was previously assessed by the Secretary under this Act; or to any person whose license is suspended.

The Secretary may exempt persons from licensing and other requirements under this Act, subject to such conditions as the Secretary may prescribe in regulations.

Section 29(a) of the Animal Welfare Act is amended to read as follows: The Secretary [of Agriculture] shall notify the Attorney General whenever the Secretary has reason to believe that a dealer, exhibitor, research facility, carrier, or intermediate handler—is dealing in stolen animals, is placing the health of any animal in danger, in violation of this Act or the regulations or standards issued thereunder; or is otherwise in violation of this Act or the regulations or standards issued thereunder; and should be enjoined from operating in violation of this Act or the regulations or standards issued thereunder. After notification, the Attorney General may apply to the United States district court for the district in which the violator resides or conducts business for a temporary restraining order or preliminary injunction to prevent such violator from operating in violation of this Act... Related bills: S. 2114, H.R. 3393, H.R. 3398.

- **S. 2114 To amend the Animal Welfare Act to ensure that all dogs and cats used by research facilities are obtained legally, and for other purposes.**

Introduced September 24, 1996, by Daniel K. Akaka (D-Hawaii) and referred to the Committee on Agriculture, Nutrition, and Forestry. This bill may be cited as the "Pet Safety and Protection Act of 1996."

Section 7 of the Animal Welfare Act (7 U.S.C. 2137) is amended to read as follows: No research facility or Federal research facility may use a dog or cat for research or educational purposes if the dog or cat was obtained from a person other than a permissible source. Permissible sources include: (1) a dealer licensed under section 3 that has bred and raised the dog or cat; (2) a publicly owned and operated pound or shelter that is registered with the Department of Agriculture and has obtained the dog or cat from its legal owner, other than a pound or shelter; (3) a person that is donating the dog or cat and that bred and raised the dog or cat; or owned the dog or cat for not less than 1 year immediately preceding the donation; (4) a research facility licensed by the Department of Agriculture; or (5) a Federal research facility licensed by the Department of Agriculture. Related bills: H.R. 4249, H.R. 3393, H.R. 3398.

Note: H.R. 2508 the "Animal Drug Availability Act of 1996" was signed into Public Law 104-250 on October 9, 1996. H.R. 2508 was listed in the AWIC Newsletter, Spring 1996, Volume 7, No. 1, page 17.



To find out the status of these or any other bills, contact the congressional bill status line at (202) 225-1772. This information is also available on the World Wide Web at <http://thomas.loc.gov/bss/d105query.html> (105th Congress) or <http://thomas.loc.gov/d104/d104query.html> (104th Congress). ■

Upcoming Meetings

House Rabbit Society Veterinary Conference, March 7-9, 1997. Berkeley, California. Contact phone: (510) 521-4631, fax: (510) 521-4631, e-mail: hrrsd@aol.com, WWW: <http://www.rabbit.org>

Society of Toxicology, March 9-13, 1997. Cincinnati, Ohio, USA. Contact phone: (202) 371-1393.

ARENA Annual IACUC Meeting, March 16, 1997. San Diego, California, USA. Contact phone: (617) 423-4112.

NIH: National Animal Welfare Education Workshop: Annual PRIM & R IACUC Conference, March 17-18, 1997. San Diego, California, USA. Contact phone: (301) 496-8101, ext. 233, fax: (301) 402-0527.

FASEB Experimental Biology, April 6-10, 1997. New Orleans, Louisiana, USA. Contact phone: (301) 530-7010.

NIH: National Animal Welfare Education Workshop: Development of Institutional Disaster Plans, May 15-16, 1997. Cleveland, Ohio, USA. Contact phone: (301) 496-8101 ext 233, fax: (301) 402-0527.

American College of Laboratory Animal Medicine 1997 Forum, May 11-14, 1997. Perdido Beach, Alabama, USA. Contact fax: (919) 851-3126, e-mail: cwmaclam@aol.com

Congress on In Vitro Biology, June 14-18, 1997. Washington, DC, USA. Contact phone: (410) 992-0946.

American Dairy Science Association, June 23-25, 1997. Guelph, Ontario, Canada. Contact phone: (217) 356-3182, fax: (217) 398-4119, e-mail: mollyk@adsa.org

2nd International Conference of Animal Health Information Specialists, July 1-4, 1997. Fredericksberg, Denmark. Contact phone: +45 35 28 21 39, fax: +45 35 28 21 58 e-mail: ael@kvl.dk

American Veterinary Medical Association (AVMA), July 19-23, 1997. Reno, Nevada, USA. Contact phone: (708) 925-8070.

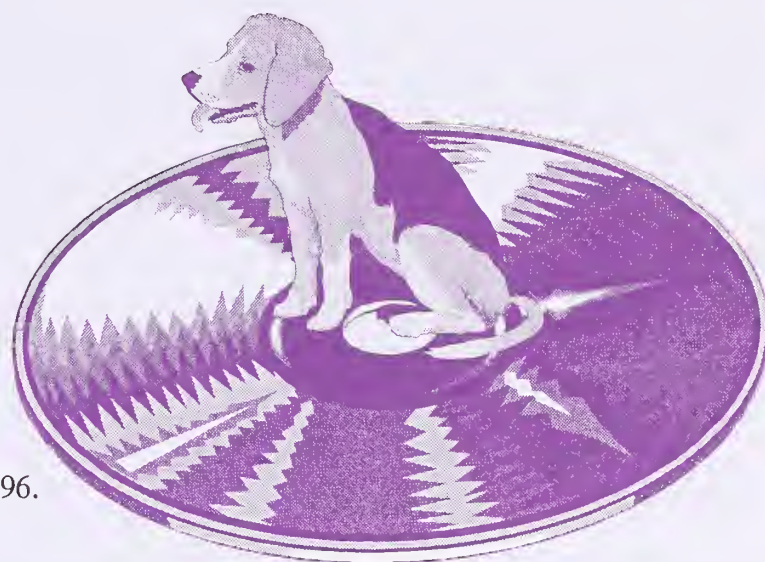
American Society of Animal Science (ASAS) Annual Meeting, July 28- August, 1997. Nashville, Tennessee, USA. Contact phone: (217) 356-3182, fax: (217) 398-4119, e-mail: mollyk@adsa.org

NIH: National Animal Welfare Education Workshop: Road Map to Cyberspace for Lab Animal Scientists (hosted by Washington University, St. Louis, Missouri and the Scientists Center for Animal Welfare (SCAW), September 25-26, 1997. St. Louis, Missouri, USA. Contact: phone: (301) 496-8101, ext. 233, fax: (301) 402-0527.

American Association of Laboratory Animal Science National Meeting, November 16-20, 1997. Anaheim, California, USA. Contact phone (901) 754-8620. ■

AWIC Introduces CARE CD

The Animal Welfare Information Center (AWIC) proudly introduces CARE (Compendium of Animal REsources)- a unique CD-ROM designed to provide quick and easy access to more than 160 documents relating to animal care and use. Prepared primarily for the biomedical research community, veterinarians, animal care regulators, and Institutional Animal Care and Use Committee members, CARE contains Federal legislation and regulations, policies and guidelines of professional scientific societies, bibliographies, and full-text articles and monographs. The information is current through July 1996.



Some of the documents included are:

- Title 9 Code of Federal Regulations, Subchapter A, Animal Welfare (1995)
- Guide for the Care and Use of Laboratory Animals (1996)
- Public Health Service Policy on Humane Care and Use of Laboratory Animals (1996)
- Environmental Protection Agency and Food and Drug Administration regulations of animal testing.
- Professional organization guidelines and statements including euthanasia, blood removal, transit of animals, care and breeding of nonhuman primates, and health monitoring.
- Books, manuals, and conference proceedings on animal care and use in behavioral research, neuroscience experiments, reptile and amphibian studies, education and training manuals for laboratory personnel.
- 35 bibliographies, resource guides, and fact sheets produced by the Animal Welfare Information Center at the National Agricultural Library
- 6 volumes of *Animal Welfare Information Center Newsletter*
- 18 zoo animal bibliographies and resource guides from the Smithsonian Institution libraries.

Many of the documents are difficult to locate in hardcopy or appear on this disk with special permission from the authors and publishers. Although some of these documents are available from the World Wide Web, the CARE CD is a good way of keeping related documents in one place as an archival resource, and its documents can be downloaded or printed rapidly. The disk contains ReferenceBook and Adobe Acrobat software, making it easily searchable. CARE CD operates in DOS, Mac, Windows 3.1, and Windows 95 environments.

Care CD was funded and developed by the following organizations:

U.S. Department of Agriculture

- Agricultural Research Service, National Agricultural Library, AWIC
- Animal and Plant Health Inspection Service, Animal Care

U.S. Department of Health and Human Services, National Institutes of Health

- Office of Protection from Research Risks, Division of Animal Welfare
- Office of Animal Care and Use, Interagency Research Animal Care Committee

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Fax orders to (202) 512-2250; phone orders to (202) 512-1800

Note: Prices include regular domestic postage and handling and are subject to change. International customers please add 25 percent.

For further information, contact: Animal Welfare Information Center, phone: (301) 504-6212, fax: (301) 504-7125, e-mail: awic@nal.usda.gov

Please do not send order requests to the Animal Welfare Information Center.

Announcements...

- **U.S. Department of Agriculture (USDA) Information Directory on the Internet**

The latest edition of the USDA Office of Communication's directory *How to Get Information From the U.S. Department of Agriculture* is available on the World Wide Web at <http://www.usda.gov/news/howto/howto.htm>

This directory lists sources of information in USDA and its various agencies. It also includes names of the various Freedom of Information Act officers.

- **Food Animal Residue Avoidance Databank (FARAD)**

The USDA FARAD Compendium of Food and Drug Administration-approved drugs provides information about drugs that are available for treating animal diseases, withholding times for milk, and preslaughter withdrawal times for meat. This fully searchable database is available on the World Wide Web at <http://sulaco.oes.orst.edu:70/1/ext/farad>, or contact USDA, FARAD at (888) 873-2723. This is a toll-free number that may not be available outside the United States.

When this information is not sufficient, telephone access to FARAD experts is available through the FARAD Regional Access Centers at the University of California (916) 752-7507, University of Illinois (217) 333-6731, and North Carolina State University (909) 829-4431.

- **International Course on Laboratory Animal Science: Utrecht**

A 2-week intensive course on laboratory animal science will be organized at the Department of Laboratory Animal Science Utrecht, The Netherlands, on June 9-20, 1997. The course objectives are to present facts and principles essential for the humane use of animals for quality research. Its contents follow the recommendations of the Federation of European Laboratory Animal Science Associations (FELASA) regarding the training of scientists who use vertebrates. It may also be of interest to those who intend to develop a similar course at their location. For information and application forms, contact Prof.dr. L.F.M. van Zutphen or Mrs. Marianne Albers, Department of Laboratory Animal Science, Faculty of Veterinary Medicine, P.O. Box 80.166, 3508 TD Utrecht, The Netherlands, phone: 31-30-2532033, fax: 31-30-2537997.

- **And speaking of Utrecht....The Netherlands Centre Alternatives to Animal Use**

The Netherlands Centre Alternatives to Animal Use (NCA) coordinates research and disseminates information about alternatives throughout The Netherlands. It supports the Alternatives to Animal Experiments Platform, in which the Dutch government, industry, and animal protection organizations collaborate. NCA produces a free newsletter, organizes symposia, produces teaching modules, and manages two databases, including one on alternatives that exist or are being developed in The Netherlands. For additional information, contact The Netherlands Centre Alternatives to Animal

Use, Yalelaan 17, De Uithof, NL-3584 CL Utrecht, The Netherlands, phone: + 31 30 2532186, fax: + 31 30 2539227, e-mail: valk@cc.ruu.nl

- **American College of Laboratory Animal Medicine (ACLAM) 1997 Forum**

The 1997 forum will focus on the topics of human resource issues in research animal resources, interpersonal skills such as negotiation and communication, quality assurance and cost management, and design of laboratory animal facilities. There will be formal presentations, discussion groups, roundtables, and time for social activities and informal discussions. The forum will be held in at the Perdido Beach Resort on the Alabama Gulf Coast on May 11-14, 1997. For more information, contact Charles McPherson, D.V.M., Executive Director, ACLAM, 200 Summerwinds Drive, Cary, NC 27511, fax: (919) 851-3126, e-mail: cwmaclam@aol.com

- **Congressional Research Service Reports Available**

The Committee for the National Institute for the Environment (CNIE), a nonprofit organization, is making available more than 200 full-text U.S. Congressional Research Service reports on environmental issues. These reports cover topics such as biodiversity, information sources, wetlands and aquatic issues, regulatory reform, water quality, and pesticides. These documents are available through the CNIE, National Library for the Environment, which can be found at <http://www.cnie.org/nle>

- **Dissection Alternatives Available**

The Humane Society of the United States (HSUS) has established a loan program to provide students and educators with up-to-date alternatives to classroom animal dissection and live-animal experimentation. Elementary school through college-level interactive computer simulations, models, videotapes, and charts are available. For more information, contact Jonathan Balcombe, Ph.D., Animal Research Issues, HSUS, 2100 L St., NW, Washington, DC 20037, phone: (301) 258-3046, fax: (301) 258-3082, or e-mail: hsulab@ix.netcom.com

- **New Primatology Directory Published**

The Wisconsin Regional Primate Research Center, University of Wisconsin, Madison, announces the publication of the third edition of the *International Directory of Primatology*. The purpose of the directory is to enhance communications among organizations and individuals involved in primate research, conservation, and education. It can be used by primatologists as a desktop working tool or by educators, librarians, students, and the general public as a guide to primate programs and information resources.

The directory's five sections cover (1) geographically arranged entries for major primate centers, laboratories, educational programs, foundations, conservation agencies and sanctuaries; (2) field studies; (3) groups involved with non-human primate population management; (4) professional primate societies, including the membership roster of the In-

ternational Primatological Society; and (5) major information resources in the field. Access to this information is supported by organizational, species, subject, and name indexes.

Ordering information can be obtained from Larry Jacobsen, IDP Coordinator, Wisconsin Regional Primate Research Center Library, 1220 Capitol Court, Madison, WI 53715-1299, phone: (608) 263-3512, fax: (608) 265-4729, e-mail: library@primate.wisc.edu

● An Interactive Health and Science Calendar for 1997

The Massachusetts Society for Medical Research (MSMR) is making its interactive calendar *People and Animals: United for Health* available to elementary-level health and science educators and organizations. The 1997 calendar is for students in kindergarten through sixth grade and addresses key concepts in animal and human health and welfare in an interactive and visually engaging format. The calendar has won several awards for creativity and educational innovation. Each month of the poster-size calendar covers a different health or science topic using coloring, writing, and drawing activities related to the monthly theme (such as aging, diabetes, nutrition, mental health and substance abuse); hands-on experiments; discussion questions; healthy living tips; and careers. To order the calendar or the teacher's guide 'Heads on for Healthy Living!' contact, MSMR, 73 Princeton St., Suite 311, MA 01863, phone: (508) 251-1556, fax: (508) 251-7683.

● IATA Live Animals Regulations (23rd edition, effective October 1, 1996)

In the transportation of live animals, no aspect is more important than ensuring the safety and welfare of the animals. Published annually in English, French, and Spanish, the IATA (International Air Transport Association) *Live Animals Regulations (LAR)* is the minimum standard for shipping live animals by air. *LAR* is implemented by airlines worldwide and its container requirements are enforced by the European Union, Canada, the United States, and parties to the United Nations Convention on International Trade in Endangered Species (CITES).

The 23rd edition includes updated container requirements for dogs and cats, horses, baby turtles, water snakes, reptiles, birds, insects, fish, marine mammals, and laboratory animals. A new training section is published to provide guidelines on live animal transportation.

Copies of the IATA *LAR* can be ordered from the Customer Service Department, IATA, 2000 Peel St., Montreal, Quebec, Canada, H3A 2R4, phone: (800) 716-6326, (514) 985-6326, fax: (514) 844-7711.

● Ethics and Animal Research Course

The Kennedy Institute of Ethics at Georgetown University announces that its course and conference "Applied Ethics in Animal Research: From Theory to Decision Making" will be hosted by the University of New Mexico at Albuquerque from May 31 to June 3, 1997. The program will focus on decision-making in a variety of animal-use contexts. The conference is intended for biological, biomedical, behavioral, and social scientists; clinicians; students; scholars of the humanities and

philosophy; and the public. Poster presentations involving original research broadly related to the intersection of ethics and animals must be submitted by April 1, 1997. For additional information, contact John P. Gluck, Department of Psychology, University of New Mexico, Albuquerque, New Mexico 87131, phone: (505) 277-3420, fax: (505) 277-1394, e-mail: jgluck@unm.edu

● Available on the World Wide Web

- National Animal Health Monitoring System (NAHMS)
<http://www.aphis.usda.gov/vs/ceah>

Produced by the U.S. Department of Agriculture, Centers for Epidemiology and Animal Health, contains NAHMS reports and information sheets about U.S. dairy, beef, and swine health and management.

- Norwegian Inventory of Audiovisuals (NORINA)
<http://oslovet.veths.no/NORINA>

Lists and describes audiovisuals (including interactive simulations and tutorials, models, CD-ROM) that can be used to reduce animal numbers, refine techniques, or replace animal models in research and teaching. Also contains general audiovisuals useful in veterinary and medical training.

- University of California at Davis Center for Alternatives

http://www.vetmed.ucdavis.edu/Animal_Alternatives/main.htm
Contains contact information, programs, information resource guides (for example, training in animal handling, ethical issues, animal care and use committees), and the newsletter *UC Alert*.

- Guide for the Care and Use of Laboratory Animals
<http://www.nap.edu/readingroom/books/labrats/>

HTML version of the *Guide* produced by Institute of Laboratory Animal Resources of the National Academy of Sciences.

- Global Electronic Reporting of Emerging Diseases

The Federation of American Scientists (FAS) has established ProMED-mail (Program for Monitoring Emerging Diseases). ProMED-mail is an independent, global electronic conference that receives and publishes timely reports from all sources on outbreaks of infectious diseases in humans, animals, and plants. It links scientists, doctors, veterinarians, plant pathologists, journalists, and lay people from all parts of the world who share information and discuss emerging disease concerns by e-mail. All reports are monitored by experts before posting. ProMED-mail, a project of SateLife, is free to users. To view sample ProMED-mail reports via the World Wide Web, visit <http://www.healthnet.org/promed.html>, and to view daily digests, visit <http://www.medscape.com/Home/Medscape-ID/Medscape-ID.html>. For subscription information, contact FAS, 307 Massachusetts Ave., NE, Washington, DC 20002, phone: (202) 546-3300, fax: (202) 675-1010, e-mail: fas@fas.org ■

Grants...

- **Fellowships at the Smithsonian Tropical Research Institute (STRI)**

Information about predoctoral, postdoctoral, senior postdoctoral, and 10-week fellowships is available through the Smithsonian's Office of Fellowships and Grants, 955 L'Enfant Plaza, Suite 7000, Washington, DC 20560, e-mail: si.pehudson@ic.si.edu, or <http://www.si.edu/research+study>

Additionally, 3-month fellowships (deadline: February 15, May 15, August 15, and November 15), and an annual 3-year postdoctoral fellowship (deadline: January 15) are available directly through STRI. For information write to: Smithsonian Tropical Research Institute, Unit 0948, APO AA, 34002-0948, e-mail: stri.tivoli.dealbag@ic.si.edu, or <http://www.si.edu/organiza/centers/stri/>

- **Johns Hopkins Center for Alternatives to Animal Testing (CAAT)**

CAAT is soliciting proposals for the 1998-99 grant period. The proposed research should provide fundamental knowledge needed to develop replacement alternative tests for safety/hazard evaluation, risk assessment, and efficacy of commercial products.

The investigation of in vitro approaches to evaluate cellular and target organ toxicity is encouraged. Some examples are: developing new cell culture systems, applying current testing methodology to human cells/cell lines, and designing new mechanistic, state-of-the-art methods that may use cultures cells, computer technology (e.g., structure-activity relationships), or any other system applicable to toxicity/efficacy evaluation. At the present time, CAAT does not fund projects relating to carcinogenicity or mutagenicity, or those not focused on developing testing strategies. The maximum grant award for this period will be \$20,000.

Applications must be placed on a CAAT Preproposal Abstract Form (98-99). These forms are available from Ann Kerr, CAAT, 111 Marketplace, Suite 840, Baltimore, MD 21202-6709 USA, phone: (410) 223-1693, fax: (410) 223-1603, e-mail: akerr@caat.spharbor.jhu.edu

The deadline for submission of preproposal abstracts is March 14, 1997.

- **Alternatives Research and Development Foundation (ARDF)**

The ARDF is soliciting research proposals to develop alternatives to traditional uses of laboratory animals in basic research, testing, and education. Funding of up to \$40,000 each is available to support individual projects at U.S. universities and research institutions. Deadline for applications is April 30, 1997, with recipients announced on July 15, 1997. For further information and application instructions contact: The ARDF, 14280 Golf View Drive, Eden Prairie, MN 55346-3000, fax: (612) 949-2619.

- **Esther A. and Joseph Klingenstein Fund, Inc.**

This program funds organizations whose missions include educational activities promoting appropriate animal use in biomedical research. For more information, contact the fund at 787 Seventh Avenue, 6th Floor, New York, NY 10019-6016, fax: (212) 492-7007.

- **Errata**

In *Animal Welfare Information Center Newsletter*, Spring 1996 (7(1): 22), the deadline for Procter & Gamble grant applications for research supporting the development of animal alternatives was incorrect. The correct deadline is August 15. Up to three awards are given annually, each with stipends of up to \$150,000. Any academic or nonprofit research institution, worldwide, qualifies to apply. The company supports research that will replace or reduce animal numbers or reduce animal distress in testing the safety and efficacy of drugs and consumer products. A brochure describing the research areas of particular interest to Procter & Gamble is available on request by fax to (513) 627-1153. ■

National Animal Welfare Education Workshops for 1997

The National Institutes of Health (NIH), Office for Protection from Research Risks (OPRR), is continuing to sponsor workshops on implementing the Public Health Service Policy on Animal Welfare Education. Each of the workshops scheduled for fiscal year 1997 will focus on a specific theme.

The workshops are open to institutional administrators, members of Institutional Animal Care and Use Committees (IACUC's), laboratory animal veterinarians, investigators, and other institutional staff who have responsibility for animal care and use programs. Ample opportunities will be provided to exchange ideas and interests through question and answer sessions and informal discussions.

For further information concerning future NIH OPRR animal welfare education workshops, contact Darlene Ross, Education Coordinator, OPRR, NIH, 6100 Executive Boulevard, Suite 3B01, MSC-7507, Rockville, MD 20892-7507, phone: (301) 496-8101 ext. 233, fax: (301) 402-0527.

The current schedule includes:

- Development of Institutional Disaster Plans hosted by Case Western Reserve University (CWRU) School of Medicine and the Ohio Scientific Education and Research Association. The workshop will be held on May 15-16, 1997, at CWRU School of Medicine in Cleveland, Ohio.
- Road Map to Cyberspace for Lab Animal Scientists hosted by Washington University, St. Louis, Missouri, and the Scientists Center for Animal Welfare (SCAW). The workshop will be held on September 25-26, 1997, in St. Louis, Missouri. ■

“Meeting the Information Requirements of the Animal Welfare Act”

The Animal Welfare Information Center (AWIC) of the U.S. Department of Agriculture, National Agricultural Library (NAL) has developed a 2-day workshop for individuals who are responsible for providing information to meet the requirements of the Animal Welfare Act. The workshop will be held at NAL in Beltsville, Maryland.

The act requires that investigators provide Institutional Animal Care and Use Committees (IACUC) with documentation demonstrating that a thorough literature search was conducted regarding alternatives. An alternative is any procedure that results in the reduction in the numbers of animals used, refinement of techniques, or replacement of animals.

The objectives of the workshop are to provide:

- an overview of the Animal Welfare Act and the information requirements of the act.
- a review of the alternatives concept.
- a comprehensive introduction to NAL, AWIC, and other organizations.
- instruction on the use of existing information databases/networks.
- online database searching experience.

This workshop is targeted for principal investigators, members of IACUC's, information providers, administrators of animal use programs, and veterinarians. All participants will receive a resource manual.

The workshops will be held on April 17-18, July 10-11, and October 16-17, 1997. The workshops will be limited to 20 people. There is presently no fee for the workshop.

For more information, contact AWIC at Tel: (301) 504-6212, Fax: (301) 504-7125, or e-mail: awic@nal.usda.gov, or write to:

*Animal Welfare Information Center,
U.S. Department of Agriculture, National Agricultural Library,
10301 Baltimore Avenue, Beltsville, MD 20705-2351*

Book Review: AATA Manual for the Transport of Live Animals by Road

1996, T.C. Harris, ed.
PO Box 251
Redhill RH1 5FU
United Kingdom

Tel: 011-44-1737-82-22-49
Fax: 011-44-1737-82-29-54
e-mail: 100257.1720@compuserve.com

The preface begins, “It is probable that every domesticated animal travels by road at least once in a lifetime.” This well-established fact makes the Animal Transportation Association (AATA) manual an important resource to gaining a better understanding of what is required to ensure the well-being of an animal being moved from one location to another. There is, unfortunately, a scarcity of books, texts, or guides that include practical and essential factors that contribute to a safe and humane journey for animals in transit by road. Such factors are important to ensuring that the animal arrives at its destination having experienced minimal stress and weight loss and its well-being has not been compromised during the journey. This AATA manual is a most significant contribution to ensuring that those in the animal transport industry have a practical source of information on not only the regulations but the how-to and reasons for providing conditions ensuring that animals arrive safely at their destinations.

The manual contains information mainly related to road transportation of animals in the United Kingdom and European Community and there is no question that European shippers would be remiss and even delinquent in their responsibilities if they did not have this resource at their fingertips for daily use. It is also a good resource for everyone worldwide involved in the transportation of animals. It is particularly valuable for North American and other shippers engaged in the transatlantic shipment of animals. The manual is a ready reference listing all air, sea, and road entry points in Europe.

This AATA manual complements the IATA (International Air Transport Association) *Live Animal Regulations* (23d edition, effective October 1, 1996) because every animal that is transported by air has to be delivered and connected by road. It has its own style and flavor, providing practical and often essential information necessary for responsible handling of animals during road transport. Most chapters have information giving mandatory requirements for those shipping animals by road anywhere in the world.

The AATA manual contains many universally applicable features such as vehicle requirements, ventilation, safety, animal welfare and health, food and water, as well as stocking and loading densities. These cover not only livestock but also pets, laboratory species, and wild animals.

Tim Harris and his associates are to be commended for putting this living document together. They intend to upgrade and update it regularly to include all countries. Contributions to this process are solicited and will be carefully considered.

Harry C. Rowsell, D.V.M., Editor, AATA Newsletter



VETBASE

One of the more frequently asked questions at AWIC concerns drug dosages to be given to animals. Now there is a great resource available to help researchers and veterinarians answer these questions. Vetbase (ISBN 90-803346-2-6) is a database of veterinary dosages for non-antibiotic drugs. The database, compiled by J.D. Kuiper, D.V.M. and H.J. Kuiper, Ph.D. at Utrecht University, contains information on more than 800 drugs for use in over 100 animal species including all laboratory and farm animals, zoo animals, fish, amphibians, and reptiles. The database lists more than 10,000 dosages with over 4,500 of these for pain and anesthesia. Vetbase is

easy to search using built-in search commands. The user picks the species of interest and can then search for information based on a specific drug (ketamine, ivermectin, etc.) or pharmaceutical class (anesthetics, analgesics, anthelmintics, etc.) and, if desired, route of administration. The information that is retrieved includes the drug name, dosage(s), route of administration, and literature references.

System requirements are: Windows 3.1 or Windows 95, 15 Mb free space on the hard disk, and 500 K RAM available internal memory.

For more information or to order, contact Hajeka Informatie & Advies, Graafschap 7, 3524 TL Utrecht, The Netherlands, or fax: +31 30 289 42 51. The cost is US \$250.

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs and marital or familial status. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotape, etc.) should contact the USDA Office of Communications at (202) 720-2791.

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, DC 20250, or call 1 (800) 245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

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